REMARKS/ARGUMENTS

In US Patent Application 10/774,002 the Examiner set forth a double patenting rejection of claim 1 thereof based on claim 1 of the present application. That rejection has been argued in US Patent Application 10/774,002.

The Examiner rejected claims 1-23 under 35 U.S.C. 112, second paragraph. Claim 1 has been amended to recite that the layer of gain material is "disposed on said reflecting layer". This amendment should deal fully with the rejection of claim 1 under 35 U.S.C. 112, second paragraph.

With respect to the Examiner's objection to the term "annular-like" a suitable definition has been added to the specification at page 9 thereof.

With respect to claim 18, the difference in the pumping of the gain and lossy regions can vary from a maximum difference in applied pumping --- namely the gain region having a non-zero pumping level sufficient to achieve gain, and the lossy region having a zero pumping level --- to a minimum difference in applied pumping whereby the gain region is pumped with a non-zero pump source to achieve gain, and the lossy region having a pumping level to minimize optical losses in, or adjacent to, the gain region in terms of gain losses due to reduced electric-field fringe effects. So the lossy region can experience pumping, albeit less than that which the gain regions experience.

The rejections of the remaining claims under 35 USC 112 is not understood. The Examiner rejected all the claims pending in this application but then only provided commentary as to why a subset of them was being rejected.

The Examiner rejected claims 1, 2, 9, 10, 12-15, 18-21, 24, 26 and 28 under 35 U.S.C. 102 as being anticipated by US Patent 5,926,494 to Pepper. This grounds for rejection is respectfully traversed.

In Pepper '494, layer 24 is uniform. The gain and lossy regions are defined by segmenting the incoming beam 20 into a plurality of smaller beams 14 which are collectively referred to as a spatially modulated beam optical pump beam 14 in Pepper '494. These smaller beams form spots.

Note carefully the passage at column 2, lines 17 - 20, where Pepper '494 in comparing his then present invention with the prior art, clearly mentions that that earlier invention "is made possible without physically segmenting or modifying the gain media." So the gain and lossy regions shown in Figure 1 of Pepper '494 do not correspond to some physical segmentation occurring in the gain media 24, but rather to the fact that segmenting the beam 20 has a varying gain/loss effect when it is applied to the gain media 24 in the form of spots.

In Pepper '494, the optical segmentation of beam 20 occurs optically in element 40 which is described at column 8, lines 23-46. Note the correspondence of the generated spots with regions 10 and 12 in the gain media 24. So regions 10 in Figure 1 correspond to spots of light falling on a uniform gain media 24, while region 12 is where the spots do not occur.

The prior art (Pepper '494, column 12, lines 46-51) has the general statement of "fragmented gain regions can be realized electrically, by attaching an electrode array in a pattern similar to the optical pump-beam patterns discussed above..." This is a very general, nonspecific statement, in the form of a "proposed, analogous, similar" geometry. Yet, the prior art of Pepper '494 does not teach how to implement such an analogous device. And it is

suggested that a person skilled in the art would assume that if one is to realize the fragmented gain regions (spots) electrically, that would involve somehow modifying element 40 to create the spots by electrical means as opposed to optical means. How is that done? Pepper '494 doesn't really describe how it can be done, but rather hints that it might be possible. But even if a person skilled in the art can somehow modify element 40 to produce spots electrically, as opposed to optically, the result remains that the gain media 24 is uniform. And if gain media 24 is uniform, then the present claims are not anticipated.

Claim 1 recites, *inter alia*, "a layer of material disposed on said reflecting layer and comprising a plurality of gain regions and a passive/lossy region or regions, said gain regions being responsive, in use, to electric fields, in order to produce gain in the gain regions relative to the passive/lossy region or regions." That structure is not shown in Pepper '494.

Claim 12 recites, *inter alia*, "partitioning said monolithic gain element into a plurality of gain regions and at least one passive/lossy region; and subjecting the gain element, in use, to electric fields, in order produce gain in the gain regions relative to at least one passive/lossy region." Such steps are not taught by Pepper '494.

Claim 18 recites, *inter alia*, "at least one monolithic gain element partitioned into gain regions and at least one passive/lossy region, said gain element being pumped by said at least one pumping source in order to amplify said input optical signal beam to produce an amplified output optical signal beam, the monolithic gain element having a substrate, a reflecting layer disposed on said substrate, and a layer of lasing material partitioned into said gain regions and said at least one passive/lossy region, said plurality of gain regions being differently electrically pumped relative to said at least one passive/lossy region." That structure is not shown in Pepper '494.

Claim 24 recites, *inter alia*, "a plurality of monolithic gain medium elements having a plane, fabricated to provide a passive/lossy configuration to minimize modes of operation that are substantially within the plane, while maintaining a high-gain path for a mode of operation that is substantially normal to the plane." That structure is not shown in Pepper '494.

Claim 1 has been amended to change "subjected" to --responsive--. This amendment is not intended to change the scope of the claim in any significant way, but to use a term (responsive) which is better suited to an apparatus type claim than the original term (subjected) which is better suited to a method type claim.

Claim 12 has been amended to add a missing word (element) while claim 18 has been amended to remove a superfluous word (being). Neither of these amendments changes the scopes of these claims in any significant way.

The Examiner's rejection of the other dependent claims is not discussed herein as it is believed that the independent claims patentably define over the art. However, it is believed that the Examiner overlooks independently patentable features therein.

Withdrawal of the rejections and allowance of all the claims are respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

22 September 2006
(Date of Transmission)

Mary Ngo
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22 September 2006
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